RS2

SYMPTOM-BASED OUTCOME MEASURES FOR ASTHMA

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OBJECTIVES: To develop a symptom-based outcome measure for asthma by measuring patient preferences over asthma symptoms. **METHODS:** Asthma patients were asked to choose between scenario pairs where each scenario described the patient's asthma symptoms over a period of one week. Their responses to a series of such choices were modelled using a random effects ordered probit model. The particular symptoms considered were daytime cough, daytime chest tightness, daytime wheeze, daytime breathlessness, and sleep disturbance as a result of night-time asthma symptoms. Questionnaires containing eight discrete choices were completed by 162 moderate to severe asthma patients. **RESULTS:** The hypothesis that patients weight the five symptoms equally was clearly rejected. Specifically, daytime cough and breathlessness were weighted twice as heavily as the other three symptoms. The weights did not appear to be influenced by the patient's age, gender, or asthma severity. There was no evidence that the order in which symptoms were presented affected the results. However, there was some evidence that the conventional linear additive model may not be suitable. **CONCLUSIONS:** Discrete choice modelling proved to be a useful approach for developing preference based outcome measures. There is considerable scope and need for further refinement of the methods. While the specific application reported concerned asthma symptoms the general approach is potentially useful in a wide range of applications.

RS3

QUALITY OF LIFE OF ASTHMATIC PATIENTS WITH DIFFERENT SEVERITY OF DISEASE

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OBJECTIVES: Quality of life, lung function values, and disease severity classification systems are frequently used in clinical practice, clinical trials and in economic evaluation of asthma treatment. However, the relationship among these measurements is not well understood yet. The objective of this study was to identify quality of life values of asthmatic patients with different severity of disease based on the GINA severity classification system. To examine the correlation between lung function values (FEV1, PEF) and generic and disease-specific QoL measurements. **METHODS:** 228 consecutive adult outpatients and inpatients at four sites participated in the study. Doctors had to classify the severity of disease and report the latest measured FEV1 and PEF values. Patients had to fill in three different quality of life questionnaires. **RESULTS:** Mean quality of life values were 21, 38, 52, 60 for SGRQ questionnaire; 48, 43, 36, 31 for SF-36 (PCS); 55, 46, 42, 44 for SF-36 (MCS); 0.93, 0.76, 0.65, 0.52 for EuroQol weighted health status in the four severity groups, respectively. Correlation coefficients were 0.62 between EuroQol and PCS; 0.59 between EuroQol and MCS; −0.74 between SGRQ and PCS; −0.58 between SGRQ and MCS; −0.68 between SGRQ and EuroQol. Correlation was −0.28, 0.37, −0.01, 0.21 between FEV1% and SGRQ, PCS, MCS, and EuroQol, respectively. Similar values were gained in the case of PEF% values. **CONCLUSIONS:** Lung function and QoL values correlated less than medium strongly while different QoL values correlated to each other stronger than medium. Large differences were detected in QoL according to disease severity. These results can be of high value in modeling and burden of disease studies.

DIABETES

DB1

TWO-PART MODELS FOR DEMAND OF HOSPITAL TREATMENT IN TYPE II DIABETIC PATIENTS

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OBJECTIVE: Prediction of future need for healthcare is an essential component of pharmacoeconomic models. However, recent developments in applied econometrics have demonstrated the importance of investigating for heterogeneity of risk within populations when using count data (e.g. hospitalization). We tested the hypothesis that there is a healthy sub-population with very low risk of hospitalization amongst patients with Type 2 diabetes. **METHODS:** The study population comprised 4625 type 2 diabetic patients diagnosed before 1st Jan. 1993 and still alive until 31 Dec. 1995 in Tayside, Scotland. Number of hospitalizations for each patient was calculated using a record linkage database. Risk factors age, gender and previous hospitalization for cardiovascular diseases were obtained from the databases. We compared Poisson, two-part Poisson, Negative binomial (NB) and two-part NB models. The two-part models include a logistic regression model as the first part and the truncated Poisson or NB models as the second part. The maximum likelihood procedure was used to fit the models. The likelihood ratio test and the Akaikes Information Criterion were used for model comparison. **RESULTS:** The best model was the two-part NB model. The risk factors associated with at least one hospitalization were age (log-OR = 0.0245, S.E. = 0.0026) and previous hospitalization for MI (log-OR = 0.5960, S.E. = 0.1137), Stroke (log-OR = 0.7181, S.E. = 0.1915) and other car-